ECONOMIC GROWTH, ECOLOGICAL MODERNIZATION OR ENVIRONMENTAL JUSTICE?

Conflicting Discourses in South Africa Today*

PATRICK BOND

INTRODUCTION

Since democracy was won in 1994, the African National Congress (ANC)-ruled post-apartheid state has suffered enormous erosion in key areas of its economic, social and environmental responsibilities. This reflected, in part, a coalescence of black-nationalist and white-corporate interests associated with the democratic transition, in which radical bottom-up impulses (community revolt, shopfloor power and the general delegitimization of the apartheid state) were gradually but decisively demobilized in favor of top-down elite-pacting. For corporate South Africa, moderate black rule was the necessary precondition for both a friendlier regulatory environment and massive capital flight. In terms of macroeconomic policy, the amplification of late-apartheid neoliberal economic policies — the highest interest rates in South African history through a newly-"independent" Reserve Bank, dramatic fiscal contraction, financial and trade liberalization, deregulation of commerce and the like — reflected the more general phenomenon associated with rising financial/commercial power during an advanced stage of economic stagnation. (Only labor market provisions demanded by a still-powerful trade union movement bucked the trend.) The economy was not rewarded with growth, and the emerging markets crisis led to two 30 percent crashes of the rand (in 1996 and 1998). Nor were "reconstruction and development" — the

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intended corollaries of the state and society's deracialization — particularly successful. [1]

In this context, high hopes for a tough environmental policy, and for the relevant government departments taking on board environmentalist values and strategies, also quickly faded. In this article, three illustrative studies help to reveal how the ANC government has dealt with its disastrous environmental inheritance via high-profile infrastructure programs and projects. In particular, they allow us to consider some of the more obvious sites of conflicting interests and argumentation.[2] We briefly consider competing analyses associated with ongoing development projects that are emblematic partly because of political debate associated with each, and partly because each has enormous ecological implications:

> firstly, how levels and financing systems of basic-needs infrastructure (typically for new housing projects and *in situ* shack-settlement upgrades, mainly oriented to water/sanitation and electricity) were chosen by the Departments of Constitutional Development and Water Affairs and Forestry from 1995-97, with an instrumentalist regard for ecological inequalities;
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> secondly, at the local level, how choices over allocating natural resources between basic-needs infrastructure and large-scale economic infrastructure (namely, a proposed zinc smelter plus Industrial Development Zone in the country's fourth-largest city) reflect both low environmental priorities and the economic balance of forces; and
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> thirdly, how a 1998 decision to speed up the cross-catchment transfer of water from Lesotho to the Johannesburg region will

[1] For a sample of recent books that document the transition from a critical perspective, see P. Bond, *Elite Transition: From Apartheid to Neoliberalism in South Africa* (London: Pluto Press, 2000); H. Marais, *South Africa: The Political Economy of Transformation* (London: Zed, 1998); M. Mayekiso, *Township Politics: Civic Struggles for a New South Africa* (New York: Monthly Review, 1996); and M. Murray, *Revolution Deferred* (London: Verso, 1994).

[2] Such "discourses" are explained in D. Harvey, *Justice, Nature and the Geography of Difference* (Oxford: Basil Blackwell, 1996), Chapter 13; and in relation to South African environmental legislation, in P. Bond and R. Stein, "Competing Discourses of Environmental and Water Management in Post-Apartheid South Africa," in W. Wehrmeyer and Y. Mulugetta, eds., *Growing Pains: Environmental Management in Developing Countries* (London: Greenleaf Publications, 1999).

likely play itself out with respect to environmental concerns and urban water/sanitation services.

Throughout, we find an interplay of three different ecological perspectives. The first discourse is an "orthodox economic" concern with maximizing Gross Domestic Product, showing only passing attention to associated environmental problems. The orthodox economic approach is expressed well, if in a caricatured form, in the infamous 1991 memo signed by the then-chief economist of the World Bank (and more recently, leading US Treasury official and global economic crisis manager), Lawrence Summers: "I think the economic logic behind dumping a load of toxic waste in the lowest-wage country is impeccable and we should face up to that." Rather than "internalize the externalities" associated with pollution or ecological damage, the ready solution is to try to simply displace these to somewhere political power is negligible and the immediate environmental implications are less visible, in the name of overall economic growth. After all, Summers continued, inhabitants of low-income countries typically die before the age at which they would begin suffering prostate cancer.[3] Versions of this discourse include the Wise Use movement and other arguments that place private property relations first and foremost in the ordering of society.

A second discourse offers a longer-term, somewhat more comprehensive (if thoroughly technicist) accounting of environmental processes within society. The argument on behalf of "sustainable development," drawing from Brundtland Commission ideology and endorsed by high-profile capitalist politicians like Margaret Thatcher and Al Gore, has been termed "ecological modernization." Externalities such as pollution should, in the classical example, be brought into the marketplace in such a manner as to assure that these costs are adequately accounted for in "polluter-pays" profit-loss calculations. However, prevention is preferable. State regulation and even outright controls on environmentally damaging activity are willingly recognized as potentially beneficial within this school of thought, and the rights of future generations are also factored in.

The third discourse we can label "environmental justice," for it sites the issues of ecological damage within a socio-political context first and foremost, and poses firm moral and distributional questions about that context

[3]Cited in the *Economist*, February 8, 1992.

(sometimes resorting to cultural defenses and symbolic critique). At one level, this rights-based discourse is grounded in values so well recognized that they were included in the South African Constitution's Bill of Rights in 1996: "everyone has the right to an environment that is not harmful to their health or well-being... everyone has the right to have access to health care services, including reproductive health care; sufficient food and water; and social security..."

Tellingly, however, that Constitution also provided a caveat in mandating "reasonable legislative and other measures that prevent pollution and ecological degradation, promote conservation, and secure ecologically sustainable development and use of natural resources *while promoting justifiable economic and social development*" (emphasis added), quite consistent with ecological modernization. And, underlining the central orthodox economic precept, it went on immediately to specify that "No one may be deprived of property except in terms of law of general application, and no law may permit arbitrary deprivation of property." [4]

Hence democratic South Africa is, even in its founding document, beset by conflicting discourses, the ramifications of which will be tested in the Constitutional Court for decades to come. Overall, the sense of liberal capitalist democracy prevails, augmented by "second-generation" rights beyond simply freedom of speech, association and the like. These include citizens' rights to housing and water, ironically, but their realization is unlikely given the harsh reality of residual (and in some cases expanding) apartheid-era economic power relations, documented in these emblematic cases of environmental injustice and ongoing ecological destruction.

BASIC MUNICIPAL INFRASTRUCTURE AND SERVICES

Decisions about municipal infrastructure and services provision to low-income urban and rural South Africans — what kind, how much and at what price — offer not only a particular case of environmental management, but also help reflect more generally the economic ideology adopted by the South African government amidst competing socio-ecological discourses, and also

[4]Republic of South Africa, *The Constitution of the Republic of South Africa,* Act 108 of 1996, Cape Town, sections 24.a, 27.1, 24.b, 25.1, 1996.

the manner in which a policy debate emerged and was, at least temporarily, resolved. [5]

The *Municipal Infrastructure Investment Framework* (MIIF) describes the main infrastructure and services options planned by the central government for local government implementation. This framework, according to the Department of Constitutional Development's (DCD) "User-Friendly Guide" to MIIF, entailed "an economic modelling exercise to estimate services backlogs, assess the capital costs that are involved in removing these backlogs, and calculate the recurrent costs of operating and maintaining the services."[6] The orthodox economic perspective thus simply set the capital investment associated with various options against estimated available fiscal resources (with "public-private partnership" augmentation through privatization of some municipal functions). In the process, it correlated the amounts of services to be provided — whether a house/yard tap or communal tap; whether a flush toilet or pit latrine; whether a 60 amp electrical connection or none at all — to households' ability to pay. And it established prepaid metering systems or assured recourse to services cut-offs so as to diminish the incentive of consumers not to pay for what they received.

Such an orthodox economic perspective — with no consideration for ecological values, for the need to mitigate public health hazards, for potential economic spin-offs from expanded municipal services, for the importance of relatively high-standard service levels in achieving geographical desegregation, or for the gender equalization potential of better municipal services — was the core discourse adopted in the MIIF's predecessor, the (1995) *Urban Infrastructure Investment Framework* (UIIF). Based mainly upon direct World

[5]For more details on content, see P. Bond, "Basic Infrastructure for Socio-Economic Development, Ecological Sustainability and Geographical Desegregation: South Africa's Unmet Challenge," *Geoforum*, 30, 1, 1999a; P. Bond, *Cities of Gold, Townships of Coal: Essays on South Africa's New Urban Crisis* (Trenton: Africa World Press, Part Two, 1999b); and P. Bond, G. Dor and G. Ruiters, "Transformation in Infrastructure Policy, from Apartheid to Democracy: Mandates for Change, Continuities in Ideology, Frictions in Delivery," in M. Khosa and Y. Muthien, eds., *Infrastructure for Reconstruction in South Africa* (Pretoria, Human Sciences Research Council and London: Ashgate Press, 1999).

[6]Department of Constitutional Development, *Municipal Infrastructure Investment Framework*, Pretoria, 1997, p. 2.

Bank policy advice and drafting, the UIIF entailed a variety of class, race, geographical and gender biases which cemented existing patterns of inequality through market mechanisms.

The inherited inequality was itself a formidable barrier to both growth (given domestic demand constraints) and socio-environmental justice. South Africa is the second most unequal large country in the world (after Brazil). The poorest 20 percent of the population earns only three percent of the national income, while the income share of the top 20 percent of the population exceeds 60 percent. The wealthiest 2.4 million South Africans account for over 40 percent of all consumption, while the poorest 21 million account for under 10 percent. The ratios for consumption of basic necessities such as water and energy are even more skewed. There is limited or non-existent access to infrastructure, education, primary health care and socio-economic opportunities for the majority of people (especially rural women). Only 38 percent of "African" households have access to electricity for cooking, heating or lighting (while nearly all "colored," "Indian," and "white" households have access to electricity). Only 27 percent of African households have running tap water inside their residences, only 34 percent have access to flush toilets, and only 37 percent have their refuse removed by a local authority.

In this context, the UIIF's overall orientation was towards the segregation of low-income (black) people in new, far-away slum settlements — typically located further from the cities than even the notorious townships, primarily so as to lower land acquisition costs — with very low levels of services (e.g., no electricity, communal taps, and mass pit latrines instead of water-born sanitation). The main constraints that the World Bank team established within the UIIF's discursive strategy included the limited overall fiscal resources available to South Africa for the purposes of subsidizing recurrent (not even capital) expenditure on municipal services; a cost-recovery approach so that "operating and maintenance" (marginal) expenses would be covered in full by recipients; and low-income households' quite limited ability to pay (given South Africa's vast impoverished population). (Later, each of these three premises was criticized, but by starting out with narrow parameters, the Bank team came up with a predictably narrow set of services options.)

By late 1995, a draft *Urban Development Strategy* (UDS) codified government thinking on service provision. The UDS summary demonstrated the low level of standards then contemplated for *urban* areas (rural infrastructure plans had not been developed at that stage): "communal standpipes (water), on site sanitation, graded roads with gravel and open stormwater drains and streetlights (electricity). These services will be targeted at households with an income of less than US$200 per month and charged for at between US$9 and US$12 per month."[7]

While the rationale for such low standards and such careful correlation of ability to pay appeared economically reasonable, it did not account for either the multiple positive externalities associated with provision of higher levels of services or the political mandate the ANC had won the election with, namely the *Reconstruction and Development Programme* (RDP). By way of illustration, the UIIF claimed, notwithstanding great evidence to the contrary, that "There are no major environmental problems anticipated for this project."[8] In contrast, the RDP recognized the funding gap and specified the need for tariff restructuring and cross-subsidies with respect to both water (including sanitation) and electricity. Moreover, according to the RDP, in the case of water "the national tariff structure must include...a lifeline tariff to ensure that all South Africans are able to afford water services sufficient for health and hygiene requirements." Likewise the extension of electricity to all households "must be financed from within the industry as far as possible via cross-subsidies from other electricity consumers."[9]

Yet the possibility of large national users of water and electricity paying higher than their marginal cost — not least so as to promote conservation, given South Africa's enormous legacy of water wastage — was ruled out (the World Bank did not even include it within the four funding options under consideration). Cross-subsidization was intrinsically a (market-distorting) device to be avoided, in the view of Bank resource economists. To illustrate,

[7]Ministry of Reconstruction and Development, *Urban Development Strategy*, Pretoria, 1995, pp. 24-25.

[8]Ministry of Reconstruction and Development, *Urban Infrastructure Investment Framework*, Pretoria, 1995, p. 54.

[9]African National Congress, *The Reconstruction and Development Programme* (Johannesburg: Umanyano Publications, 1994), sections 2, 6, 10, 2, 7, 8.

key Bank water expert John Roome sternly advised the Minister of Water Affairs that cross subsidies "may limit options with respect to tertiary providers" and that "in particular private concessions [would be] much harder to establish."[10] (Roome later gloated that his "power-point presentation to Department of Water Affairs" in October, 1995 was "instrumental in facilitating a radical revision in South Africa's approach to bulk water management.")[11]

It is useful, as an aside, to recount the orthodox economic argument here. A declining marginal cost curve associated with bulk supply to large users would, through cross-subsidization of low-income, small-scale consumers, be translated into a rising marginal revenue curve (and vice versa), which would distort the profit maximization calculus (by which marginal costs and marginal revenues run in parallel). Forcing service providers to cross-subsidize low-consumption blocks by raising the marginal price for high levels of consumption would, then, serve as a formidable disincentive to privatization. In contrast, evoking socio-environmental justice, the SA Municipal Workers Union addressed this relationship explicitly in their 1998 bumper sticker: "50 Liters of Water Free, No to Privatization!"

Public criticism mounted, mainly that the low UIIF/UDS services standards and government's failure to provide for recurrent subsidies were incompatible with ANC election promises. After the UIIF, draft UDS and early drafts of the MIIF (which added even lower rural standards) were published, the controversy intensified. In 1997, facing political pressure, DCD made some modifications to urban infrastructure standards. Instead of no electricity, there was the potential for urban households to receive an eight

[10] J. Roome, "Water Pricing and Management," World Bank Presentation to the SA Water Conservation Conference, Johannesburg, October 2, 1995, pp. 50-51.

[11] World Bank, *South Africa: Country Assistance Strategy* (Washington, DC: Annex C, 1999), p. 5. In addition to telling Asmal to drop proposals for a free lifeline tariff and rising block tariffs, Roome's power-point presentation included the following advice:

- Asmal must ensure both urban and rural municipalities establish a "credible threat of cutting service" to non-paying residents;
- he should be "very careful about irrigation for 'previously disadvantaged' South Africans;" and instead
- the "key lies in voluntary solutions — trading water rights," assuming that emergent black farmers could compete financially with the larger (and historically-subsidized) white commercial enterprises.

Amp supply (not strong enough, however, for heating or cooking), and instead of paying US$9-12 per month for these services, a subsidy of approximately US$12 per low-income household was planned.

Critics rejoined that such a small subsidy would not be sufficient to cover basic operating costs, and moreover there remained enormous doubt whether the grant is sustainable given budget constraints and macroeconomic stagnation. In any case, there are substantial doubts about this "targeted-grant" method of subsidy given the administrative costs of means-testing and the stigmatization with which means-testing is associated. In addition, rural households would still have much lower standards. And for urban households with less than US$200 income per month (i.e., between a quarter and a third of urban households within a decade), the new MIIF continued to recommend a Ventilated Improved Pit-latrine given that poor households would not be able to afford to flush, as well as communal (not house or yard) standpipes, a weak electricity supply, gravel roads, open storm-water drains, and communal waste dumps (not curbside removal) under the (in retrospect, optimistic) "low-growth" late 1990s macroeconomic scenario.

Part of the rationale for the marginal improvement in MIIF's service standards and the new recurrent subsidy was the recognition, compatible with the ecological modernization perspective, that indeed there were some important public health and economic benefits associated with infrastructure and services. But this calculation was notional, and, for example, the ecological harm associated with the low infrastructure standards was not considered seriously. It must be acknowledged, of course, that the environmental impact of increased infrastructure and services is complex, for both benefits and costs are associated with higher levels of services and consumption. It is generally accepted that large-scale bulk infrastructure projects (such as major dams or roads through ecologically sensitive areas) are to be avoided. But incorporating the benefits of infrastructure remains crucial. Simply in comparing pit latrines to water-borne sewage, for example, it is clear from South African research that if installed properly, the latter is potentially a far more environmentally-friendly approach (particularly in the many urban areas affected by inopportune geological and topographical

conditions).[12] Moreover, if low-income households (typically organized by women care-givers) replaced subsidized electricity — which is presently too expensive — for coal or wood (gathered locally, leading to deforestation and erosion) for purposes of cooking and heating, there would be enormous household and urban/rural environmental benefits.[13]

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[12]For details see P. Bond, 1999a, *op. cit.* Aspects that have been researched in South Africa and elsewhere include pit latrine-related pollution of surface and ground water, and public health improvements that come from higher-level sanitation. In the case of surface water, point and non-point source pollution from dense urban settlement mean that many urban streams and rivers do not meet effluent standards established by the government. Surface water contains large concentrations of bacterial contaminants, organic silt, and nutrients, along with toxins and oil, which in turn kill off aquatic life in urban streams and pollute the major raw water supply reservoirs. Typical water-treatment plants are ill-equipped to adequately purify the increasingly polluted water. In addition, while groundwater remains three to five times cheaper to develop than surface water sources, pollution to aquifers is difficult to clean up. Amongst key pollutants are solid waste dumps, leaking underground storage tanks, fertilizers and pesticides, but in addition the lack of sanitation in informal settlements has had a major adverse impact on groundwater in many parts of South Africa. In addition, lack of water access is associated with higher rates of cholera, malaria, dengue, filariasis, yellow fever, and tuberculosis. In particular, diarrheal disease (which is responsible for almost a quarter of deaths amongst black and colored South African children between 1 and 4 years of age) has been attributed to primary risk factors including the absences of an inside tap, a flush toilet in the home, a refuse receptacle, and electricity, as well as low household income and lower than Standard Five maternal education. The difference between a flush toilet and pit latrine is estimated to account for a 20 percent difference in diarrhea prevalence. Costs associated with pollution and public health have been estimated, and outweigh the slight additional capital costs of installing indoor plumbing and adding sewage treatment capacity, in comparison to ventilated-improved pit latrine construction.

However, it must also be said that the case for more general conversion of sanitation systems from water-borne to solid-waste/composting is increasingly compelling, given sanitary technological advances in Scandinavia, the U.S. and elsewhere. The immediate issue in South Africa, however, is whether neoliberal (not "natural resource") constraints lower the quality of life of the black majority, or whether a level of equality can be achieved in terms of at least a common universal lifeline supply of water and electricity to meet daily needs (entailing a tiny fraction — less than 5 percent if achieved — of total water and electricity usage).

[13]Although a minor amount more environmentally-destructive generating capacity would be needed in the long-term (because during the 1990s there was typically 30 percent over capacity due to 1980s overbidding), the benefits of a universal supply of basic household electricity far outweigh environmental and economic costs. Increased household electricity would result in diminished air pollution from coal and wood fires, diminished fuelwood collection, and a variety of public health improvements. Some of these costs (such as indoor air pollution) are limited to households, while others (deforestation, pollution caused by burning coal in urban

None of these arguments were terribly controversial within the ecological modernization discourse, as even the World Bank's *World Development Report* confirmed in 1994: "Environment-friendly infrastructure services are essential for improving living standards and offering public health protection. With sufficient care, providing the infrastructure necessary for growth and poverty reduction can be consistent with concern for natural resources and the global environment (the 'green' agenda). At the same time, well-designed and well-managed infrastructure can promote the environmental sustainability of human settlements (the 'brown' agenda)."[14] (That 1994 report even endorsed cross-subsidies and lifeline tariffs, but was ignored by the Bank's South Africa staff later the same year.) But while the final MIIF recognized the environmental issues more explicitly, it often did so by way of denying that low standards would have an adverse impact. DCD thus considered it reasonable to incorporate an ecological modernization discourse yet remain within a framework ultimately defined by orthodox economic cost-recovery principles (a common danger, internationally). Indeed, the very term "lifeline" was redefined by the Department of Water Affairs and Forestry to mean "operating and maintenance charges" (i.e., "marginal cost pricing," fully in tune with an orthodox economic approach). As a result, the technical critique of infrastructure policy was diverted into a debate about the *degree* of harm done by low standards or the potential benefit from higher standards, with World Bank staff and allied consultants holding the balance of power not through a winning argument but through fiscal restraint and conservative bureaucratic bias.

The alternative proposal advocated by social change activists from community organizations and associated NGOs, compatible with an environmental justice perspective (and with the Constitution and RDP), was a universal *free* lifeline to all South African consumers for the first block of water (50 liters of water per person each day) and electricity (1 kiloWatt hour

neighborhoods) are externalities that society as a whole pays for. Electricity also protects biodiversity, aesthetics, and visibility. In the field of public health, South African studies suggest that a universal supply of electricity would curtail more than 3,000 deaths each year due to acute respiratory infection (caused by wood/coal burning), burns, and paraffin poisoning. (See *ibid.*)

[14]World Bank, *World Development Report 1994: Infrastructure for Development* (New York: Oxford University Press, 1994), p.20.

per day) with steeply-rising prices for subsequent consumption blocks. There would be no need, in this policy framework, for means-testing or a complex administrative apparatus. Thus recurrent consumption expenses would be paid for entirely from within each sector, although an additional 10 percent expenditure would be needed, beyond what the MIIF budgeted, to finance the added capital costs (totalling US$28 billion — to be invested over 10 years — which was reasonable in relation to mid-1990s GDP of US$110 billion and an annual state budget of close to US$40 billion). The social change option was thus radical yet eminently realistic. More than the final MIIF, it took seriously the environmental and other externalities associated with infrastructure and services.

Where the social change advocates came up short, however, was in turning an extensive series of urban popular riots over municipal services — which, tragically, included the assassination of an ANC mayor known for being willing to cut power and water, as well as the burning of several ANC councillors' houses — into more sustained, constructive political pressure (this partly reflected the demobilization of the national "civic association" movement during the late 1990s). In contrast to an alliance between DCD and the big business lobby within the National Economic Development and Labour Council (the stakeholder forum at which state policies were often debated), the progressive forces failed, in 1996-97, to successfully contest the intensification of services commodification. Moreover, notwithstanding firm opposition by the progressive SA Municipal Workers Union, there was insufficient social weight to challenge the central government's inclination towards municipal privatization (to the latter end, DCD leaders attempted to pit services-starved residents against allegedly labor-aristocrat municipal workers).

Two other factors were at stake in this class struggle. Implicitly, social policy was a fight over the degree to which a capitalist state in league with big business could construct a "social wage" policy framework that had, as an objective, maintaining relatively low upward pressure on the private-sector wage floor. In other words, by keeping monthly operating costs of services low through denying workers access to flush toilets, hot plates and heating elements, the MIIF also reduced the pressures that workers would otherwise have to impose upon their employers for wages sufficient for the reproduction of labor-power. This was indirectly recognized by big business

in its strong historical advocacy of a site-and-(limited) service "self-help" housing program which would reduce monthly costs associated with laborpower reproduction, in an environment with extremely strong trade unions and extremely high unemployment (officially, more than 30 percent). But, second, a more vulgar question arose as to whether big business should sacrifice competitiveness and growth just for the sake of cross-subsidizing a large number of citizens who would forever remain unemployed and on the far periphery of the formal economy, a question government answered in the negative.[15]

The oppositional discourse alone — based on ecological modernization arguments (public health savings of giving people free services, etc.) and abstract rights principles — may not have been at fault in all of this. For in very practical ways, the social and labor movements were too weak to successfully contest the broader trajectory. Not even the strongest eco-socialist rhetorical critique could have made up for lack of political clout. What loomed ahead, as more than half of South Africa's 878 municipalities prepared to face formal bankruptcy at the turn of the 21st century — due to declining central-local grants and low levels of service payments by residents — was a (neoliberal) version of municipal environmental management. "Municipal governance" will therefore not only entail more challenging forms of social control of local populations at their sites of residence. In addition, local managers will have to grapple with a variety of urban pollution problems associated with the low levels of basic-needs infrastructure and the inadequate consumption subsidies. This will transpire, in part, by municipal officials blaming the victims for non-payment and engaging in widespread cut-offs of municipal services, hence generating future environmental crises of both a green and brown character.

[15] In late 1996, government's main infrastructure bureaucrat was challenged in the press about his failure to adopt the *RDP* provision that services such as electricity and water should be cross-subsidized. Alusaf, the big aluminum plant in Richard's Bay, for instance, received electricity at roughly $0.003 per kilowatt hour while rural consumers often paid as high as $0.08. The bureaucrat's response, to the *Mail and Guardian* (22 November 1996) was simply, "If we increase the price of electricity to users like Alusaf, their products will become uncompetitive and that will affect our balance of payments."

THE COEGA PORT, ZINC SMELTER AND INDUSTRIAL DEVELOPMENT ZONE

If cost recovery was prioritized in the case of municipal infrastructure, in contrast dramatic capital and operating subsidies are the basis for considering comparative cost-benefit analysis as applied to the city of Port Elizabeth (midway between Cape Town and Durban, on the Indian Ocean), particularly its environmentally-destructive Coega project.[16] At stake are vast quantities of public subsidies, not only for construction of a major deep-water port at Coega (replicating facilities at Port Elizabeth but with 20 meters of clearance instead of 12 meters), but also vast recurrent subsidies for cheap water and electricity consumption by large corporations. Simultaneously, the lack of access to inexpensive infrastructure-services to low-income citizens highlights the distributional effects of the orthodox economic discourse.

More than 1.2 million people live in the Port Elizabeth metropolitan area, but the city's mid-19th century industrialization and present concentration of government-based employment belie extreme levels of poverty which exist primarily in a few very large black townships.[17] A combination of key socio-economic conditions — income, health (life expectancy) and literacy — make up the Human Development Index (HDI), and Port Elizabeth's HDI of 0.67 (on a scale where 1 is the highest, 0 the lowest), based on the 1991 census, is roughly equivalent to that of South Africa as a whole. However, the HDI for the city's African residents is 0.32, compared to 0.94 for white residents.[18] Huge backlogs exist in access to basic shelter and infrastructural facilities.

The powerful Port Elizabeth Regional Chamber of Commerce and Industry argues that the areas's future lies in its role as a Southern Africa regional transport hub and industrial export platform, particularly through the proposal to establish a new deep-water port and 10,000-hectares Industrial Development Zone (IDZ) at Coega, just to the north of the city. The primary

[16]This section represents a summary of S. Hosking and P. Bond, "Infrastructure for Spatial Development Initiatives or for Basic Needs? Port Elizabeth's Prioritization of the Coega Port/IDZ over Municipal Services," in M. Khosa and Y. Muthien, eds., 1999, *op. cit.*.

[17]For a history see J. Robinson, *The Power of Apartheid: State Power and Space in South African Cities* (Oxford, Butterworth-Heinemann, 1996).

[18]Institute for Development Planning and Research, "The Port Elizabeth and Uitenhage Socio-Economic Development Monitor 1997," Port Elizabeth, 1997, pp. 8, 11-13.

rationale for this combination is to reduce the substantial transport costs associated with heavy industry, especially a zinc smelter proposed by Billiton, a subsidiary of the Afrikaner-dominated mining group Gencor (and which until the mid-1990s was owned by Shell Oil). One of Billiton's most important assets is its chief executive, who in a previous position as treasurer of the parastatal Eskom power company, approved arrangements that led to sales of electricity to a similar electricity-consuming (aluminum) coastal smelter at an extremely low price. Extremely cheap electricity is also a precondition for the Coega smelter. In return, South Africa has been promised expanded GDP and employment.

But while the short-term investment amounts are relatively large (US$750 million for the port, related infrastructure, proposed zinc and phosphoric acid plants and a cement facility, with more potential investment expected in subsequent IDZ phases), the jobs are few (just 850 for the first phase). Neighboring community residents welcome any new jobs, and at first blush the debate over Coega has appeared to be the traditional one between environmentalists and prospective workers. But matters are more complicated when one considers the kinds of "brown" issues associated with household ecology, and with the diversion of water and energy resources to the smelter.

For Coega's own ecological footprint will be large and deep. Notwithstanding cabinet-level assurances given by Trade and Industry Minister Alec Erwin that "The environmental issue has been addressed and will continue to be addressed,"[19] concerns persistently arise — and have not been conclusively answered by Coega champions — regarding the extent to which local ecology will be protected. The need for independent analysis was highlighted by R. Fuggle's critique of Coega's "Strategic Environmental Assessment": "There is no analysis of possible policy or programme alternatives, no systematic comparison of alternatives, and no analysis of how existing activities (e.g., salt extraction, citrus farming, market gardening, dairying) will be affected by the new initiatives."[20]

[19]Bay Public Relations, "Coega Construction Expected to Start Soon," Press release, Port Elizabeth, April 5, 1998.

[20]R. Fuggle, "Review of Documentation Pertaining to Coega IDZ Initiative," for Eastern Cape Citrus Forum, Port Elizabeth, July 14, 1997.

The many potential victims of Coega's environmental damage include a proposed national elephant park expansion nearby, beaches, estuaries, islands and whales. The Coega Environmental Impact Review recognized that eco-tourism may constitute an opportunity cost of the Coega IDZ, however, the issue is not explored.[21] Such costs entail the consumer surplus and tourist revenue foregone as a result of locating the park further away from PE, and the tourist revenues associated with marine and beach use. Using the Clawson-Knetsch Travel Cost Method, Geach estimated the existing park's annual recreational value to be over US$50 million.[22] McGrath and Horner estimated that line fisheries in South Africa's coastal provinces generated about US$350 million in income (about 1.3 percent of the GGP of these provinces) and about 131,560 jobs, which if applied proportionately to Port Elizabeth is worth about US$32 million per annum.[23] Although no studies have been carried out on the recreational values of visitors to beaches, dunes and islands in the Coega area (e.g., bathers, divers and hikers), presumably this also would be substantial (even recognizing that income generated for such recreational uses is primarily sourced from higher-income households, whereas the non-pecuniary satisfaction of those users of the Coega area from lower-income households may also be substantial, even if impossible to enumerate). In sum, based on those studies that have been carried out the total annual recreational value of the natural assets negatively affected by the Coega IDZ and Harbour Project could be in the region of US$82 million. If only 10 percent — a guesstimate — of this is lost due to the Coega IDZ and Harbour Project, the ecotourism opportunity cost per annum is US$8 million.

Some ecological costs have been factored in to Coega's rates-of-return calculations, including the closure of important commercial fishing grounds

[21]CEN, *Integrated Environmental Management, Environmental Impact Report on a Proposed Harbour in the Vicinity of Coega*, Port Elizabeth, June 11, 1997, p. 253.

[22]B. Geach, "The Addo Elephant National Park as a Model of Sustainable Land Use through Ecotourism," M Sc. Dissertation, University of Port Elizabeth, Port Elizabeth, 1997.

[23]M. McGrath and C. Horner, "An Economic Valuation of the South African Linefishery," Paper presented to the EBM Research Conference, University of Port Elizabeth, Port Elizabeth, November, 27-28, 1996.

as a result of increased commercial shipping in the area;[24] increased pollution in Algoa Bay;[25] and the effects of dredging on currents in Algoa Bay, reduced photosynthetic activity, and disturbance of natural and anthropogenic contaminants in silts.[26] But other environmental costs to neighboring citrus, vegetable and animal industries were not fully factored in, and include fluoride and other emissions into the air (and possibly wastes into subterranean water reserves) from heavy industries to be located in the Coega IDZ. In particular, sulphur dioxide emissions are anticipated to be dangerously close to the point at which damage is expected to occur to plants. If the undermining effect is equivalent to 5 percent of the citrus yield alone, there will be an annual income sacrifice of about US$4 million, as well as unquantifiable cost to citrus farmworker jobs. Moreover, if the zinc, phosphoric acid and cement plants use up most of the "safe" capacity available in the air to assimilate pollutants, others after them will necessarily be more constrained in what they can do and the Coega IDZ site will be less appealing to prospective investors.

Nor were health costs adequately considered in Coega's planning. Since the 1900s mortality rates have fallen for most major causes of death. The most conspicuous exception is cancer, even amongst cohorts in which the percentage of smokers has decreased.[27] Increased exposure to toxic substances is thought to be a cause, although this is difficult to prove, due to the long latency periods for cancer (from 15 to 40 years). Based on the fact that the zinc smelter and phosphoric acid plant will substantially increase the levels of toxins in the area, an increase in the incidence of cancer could be expected amongst its residents some time after they commence production. In addition there may well be a negative effect on health in the short term,

[24]T.H. Wooldridge, N.T. Klages and M.J. Smale, "Proposed Harbour Development at Coega (Feasibility Phase): Specialist Report on the Near-Shore Environment," Report commissioned by the Coega IDZ Section 21 Company, Port Elizabeth, 1997.

[25]African Environmental Solutions, *Proposed Eastern Cape Zinc Refinery and Associated Phosphoric Acid Plant: Final Environmental Impact Report*, Report for the Coega Authority, Cape Town, May, 1997, pp. 178,180.

[26]*Ibid.*, pp. 175, 178, 180.

[27]T.H. Tietenberg, *Environmental and Natural Resource Economics*, Third Edition (New York: Harper Collins, 1992), p. 512.

from sulphur dioxide and heavy metal emissions.[28] The former is widely acknowledged as a respirator irritant and a bronchoconstrictor, whose effects seem to be particularly acute for asthmatics, which include a disproportionate share of low-income people. The levels of sulphur dioxide that would be emitted by proposed industrial facilities at Coega could lead to a three percent increase in mortality in the vicinity of Port Elizabeth.[29] The heavy metal emission from the proposed facilities at Coega are potential carcinogens, particularly zinc emissions and smaller quantities of arsenic, cadmium, cobalt, mercury, nickel and silver. These emissions not only pose a potential threat through direct transmission to humans, but also through accumulation in plants and soils which is then passed on to humans.[30]

If, therefore, the estimated national income associated with the first phase of Coega is US$32 million, and if the most optimistic projections add another US$133 million, the costs associated with Coega's port, zinc smelter and IDZ (roughly US$18 million) should also be — but have not been in any meaningful "polluter-pays" method — factored in. But there are still other publicly-born costs in the form of Coega's anticipated use of water and electricity which tip the balance toward an alternative development strategy yet further. The proposed zinc smelter and phosphoric acid plant alone are expected to consume 4.9 million cubic meters of fresh water and 968 billion Watt hours per annum.

The opportunity cost of water must be taken into account, because in some parts of the Eastern Cape, including the Algoa Bay, a decision to devote

[28] N.F. Tennille and T.P.G. Le Quesne, "Proposed IDZ and Harbour at Coega: The Issues," Unpublished paper circulated by Southern Africa Environment Project, Port Elizabeth, 1997.

[29] K. Katsouyanni, G. Touloumi, C. Spix, J. Schwartz, F. Balducci, S. Medina, G. Rossi, B. Wojtyniak, J. Sunyer, L. Bacharova, J.P. Schouten, A. Ponka, and H.R. Anderson, "Short Term Effects of Ambient Sulphur Dioxide and Particulate Matter on Mortality in 12 European Cities: Results from Time Series Data from the APHEA Project," *British Medical Journal*, 314, 1997, pp. 1658-1663.

[30] Here, contamination occurs through much lower levels, because toxicity levels in plants and soil can accumulate over a period of time. Assuming an estimated 100,000 work days per year are lost due to increased pollutant levels in the environment (valuing each work day at US$11), and adding the transfers of income required to care for the sick (which could easily triple this cost), the total cost of decreased human health per annum could be on the order of US$3.5 million.

water resources to one project may well preclude another, either by eliminating its supply or by making its supply too expensive (if not immediately, at some time in the near future). The water requirement of the proposed zinc and phosphoric acid complex is 13.3 Ml/day, while the current average water demand for all existing industries in Port Elizabeth is just 14.6 Ml/day.[31] Current readily available bulk water supplies from local rivers are insufficient for Port Elizabeth, especially in times of drought, and so Port Elizabeth supplements its supplies from across the catchment into the Orange River system. That system has also shown signs of stress, and it has been impossible since mid-1993 for Port Elizabeth citrus farmers to acquire increased water rights. Whether the IDZ should be the favored consumer is subject to debate, for far more jobs per one million liters of water are created in agriculture (188 permanent on-site jobs) than in the proposed heavy industry (56 jobs). The cost of water supplied by Port Elizabeth to Coega industries would, at present, be the lowest rate, about US$0.40 per kiloliter The lack of cross-subsidization to basic users here represents a lost opportunity that can be explained by the social weight enjoyed by large corporations in Port Elizabeth municipal affairs.

As for electricity, the zinc and phosphoric acid plants are anticipated to require four percent of Eskom's available national surplus installed capacity, equivalent to about 25 percent of Port Elizabeth's current demand. Again, the electricity rates proposed (the cheapest Eskom offers) do not provide any other consumers with a cross-subsidy. As discussed above, the various multiplier effects associated with subsidized domestic water and electricity consumption are rarely factored into formal pricing or resource allocation decisions, partly because the implications are so far-reaching for redistribution. Moreover, the primary reason that infrastructure investments do not pay off in terms merely of financial rates of return, is that many people do not have enough income to afford the recurrent (operating and maintenance) charges associated with the service.[32]

[31] S. McGillivray and Port Elizabeth Municipality, "Coega Industrial Development Zone Bulk Water Supply Infrastructure Requirements," Report commissioned by the Coega IDZ Section 21 Company, Port Elizabeth, 1997, p. 32.

[32] Port Elizabeth already cross-subsidizes other activities from its electricity accounts (in 1997, this amounted to US$12 million in transfers on a budget of $163 million). But given municipal power relations, instead of promoting cross-subsidization from high-use commercial, industrial

As noted above, a universal and free lifeline supply is an alternative approach to meeting the needs of low-income people, for it better targets subsidies to those with low consumption. If 50 liters per day per person lifeline water and 20kWhs per month per person lifeline electricity were provided to all urban households in Port Elizabeth — not through means-testing (which takes expensive state staff time), but instead on a universal basis consistent with the Constitution — a manageable amount of water (14 million kl) and electricity (184 million kWhs) would be required per annum. Could Port Elizabeth afford this, even without national cross-subsidization? The municipality's foregone revenue from providing the free lifeline services to all households would be approximately US$6.5 million for water and US$6 million for electricity. With these costs nearly within the *existing* electricity budget surplus, there remains the issue of which sectors should be carrying the responsibility for the cross-subsidy associated with lifeline supply.

The analysis depends upon the price elasticities of water and electricity, which are not feasible to estimate in cases where quite large increases might occur, and which vary substantially across the range of user groups. But in the case of water, a new seven-tier tariff structure on domestic consumption is expected to generate a surplus of about US$2.3 million per year beginning in 1999. The tariff could easily be increased to achieve both conservation and revenue goals. In the case of electricity, current plans will allow the zinc smelter and phosphoric acid plant to *avoid* paying the Port Elizabeth municipality for their electricity (estimated to cost US$3 million per year) which would in turn prevent the municipality using these payments to raise a surplus on electricity sales.

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and residential consumers to low-income consumers, a municipal "Indigence Policy" was adopted in 1997 for households with less than US$80 per month (the level of state pension payouts). The means-tested subsidy applies only to effectively 6kl of water per month, for which, by mid-1998, 19,000 households received full (free) or half subsidy, even though some 55,000 households are estimated to qualify for subsidies. Administrative costs are high, entailing wages of 80 full-time workers who must monitor the policy, and disconnections have risen significantly in the wake of its application (as the Council apparently believes there is increased legitimacy to disconnect those not accommodated for). Not only subsidized water, but unsubsidized electricity accounts are affected by this policy, and during the last three months of 1997 (a representative period), there were 12,698 electricity disconnections (followed by 9,931 reconnections) and 534 water disconnections (with 218 reconnections) (Department of Constitutional Development, "Project Viability Questionnaire #14," Port Elizabeth, 1998, p. 4.)

In sum, there is far greater scope for cross-subsidization in water and electricity tariff structures in the Port Elizabeth municipal area. By making a huge public capital subsidy available to a project with such high levels of environmental destruction, and to compound this with vast public subsidies in recurrent water and energy services when so many Port Elizabeth residents face detrimental brown domestic ecological conditions, suggests that rather than an ecological modernization approach, the promoters of Coega have based their environmentalism upon extremely narrow, self-interested orthodox economic calculations. This conclusion was confirmed when in 1999, in the wake of falling international zinc prices and the withdrawal of Billiton's South Korean partner due to the East Asian crisis, rumors began to surface that the Port Elizabeth business elite were on the verge of changing strategies: instead of a zinc smelter, a German-headquartered stainless steel plant (South Africa's third) could be built on the Coega site as part of a counter-trade arrangement associated with potential import of German submarines. However, substantial social-justice protest emerged, especially from churches, against the ANC government's proposed $5 billion in arms spending, and the outcome of Coega — including the divergent discourses in play — would remain in doubt for concrete political and economic reasons, not because any particular argument was scientifically convincing and hence decisive.

A third case study of natural resource utilization — the transfer of water from Lesotho to Johannesburg — amplifies the finding from infrastructure policy and the Coega project that privileged economic actors are still extremely powerful in post-apartheid decisions over distributional and environmental justice.

THE LESOTHO HIGHLANDS WATER PROJECT

Water from the Maluti Mountains of tiny, landlocked Lesotho ordinarily tumbles down to the Orange River in South Africa, across a vast stretch of extremely fertile and then arid South African land, becomes the border with Namibia and makes its way into the Atlantic Ocean. From 1998, the Lesotho Highlands Water Project (LHWP) began diverting to the Johannesburg area what will amount to a billion cubic meters of water annually — in Phases 1A (complete) and 1B (under construction from 1998), which cost US$4 billion

— via dams and cross-catchment tunnels.[33] The water travels to the Vaal River and hence into an industrial complex comprising the Vaal Triangle (home of the steel industry), Johannesburg (Africa's largest industrial complex) and Pretoria (South Africa's capital city). In addition to farmers in Gauteng Province who draw freely from the river (and residual water that eventually joins the Orange River), 41 percent of the Vaal River is drawn out by the Rand Water Authority (in 1995) and distributed to middle-and upper-income consumers (36 percent), low-income consumers (25 percent), industry (24 percent), mines (15 percent) and other users (10 percent).

The LHWP was conceptualized during the 1950s colonial era in Lesotho, but it was only in the mid-1980s that the South African apartheid regime and Lesotho military-ruled client-government signed an agreement whose financing and socio-ecological technical work were arranged by the World Bank. This occurred under conditions of anti-apartheid financial sanctions, so had to be done largely surreptitiously, which the World Bank appreciated and lubricated through a special London-based funding mechanism. Indeed, the Bank (and allied northern government aid agencies) had a long role in fostering Lesotho's underdevelopment, partly through continually denying the obvious linkage between systematic poverty and the fact that more than half the country's GDP came from remittances from workers in South African mines a few hundred miles away. Bank and aid agency interventions typically entailed a combination of orthodox market-oriented rural modernization and the strengthening of a repressive state apparatus.[34]

Notwithstanding the importance of the aid industry, Lesotho was and remains subservient to South Africa, reflected in a post-colonial history of regular manipulations of the Maseru government by Pretoria. For example, in September, 1998, in the wake of a rumored coup that seemed to have a substantial popular backing, the SA Defense Force invaded Lesotho

[33]For details, see D. Letsie, and P. Bond, "The Impact of Large-Scale Infrastructure Projects on Basic Needs: The Case of the Lesotho Highlands Water Project," in M. Khosa and Y. Muthien, eds., 1999, *op. cit.*; and P. Bond, "The Political Economy of Dam Building and Water Supply in South Africa: Contesting the Impact of the Lesotho Highlands Water Project on Johannesburg," forthcoming in D. McDonald, ed., *Environmental Justice in South Africa* (London: James Currey Press, 2000).

[34]J. Ferguson, *The Anti-Politics Machine: "Development," Depoliticization and Bureaucratic Power in Lesotho* (Minneapolis: University of Minnesota Press, 1994).

(followed by the Botswana Defense Force so as to give the invasion a Southern African Development Community aura). The first site the SA army secured — while Maseru's business district was being burned virtually to the ground by angry rioters — was the Phase 1A Katse Dam (Africa's largest-ever public works project), which was rumored to be a potential bombing target of the coup plotters. Several dozen Lesotho troops were killed in the process.

In addition to opposition from the ANC (until it assumed power in 1994), the LHWP has been criticized from three different but parallel directions: by Lesotho communities, churches and development NGOs; by international and Johannesburg-based environmentalists; and by Soweto and Alexandra township residents who consume the LHWP water. Each is considered in turn.

The critique from indigenous communities relates not only to the Phase 1A displacement of 2,000 people and loss of common resources (grazing land, topsoil, woodlots) or income through land submersion of at least 20,000 more, and to the flooding of ancestral burial grounds (for which reimbursement and resettlement schemes were considered unsatisfactory to a majority of residents, according to 1997-98 surveys). There was also an increase in social problems consequent to the first dam's construction, including a dramatic increase in AIDS, alcohol abuse, and livestock theft. "These negative impacts," South African Water Minister Kader Asmal insists, "must be weighted against the benefits arising from the project, including access to improved health and educational facilities, water supply to communities, sanitation at schools, and, at villages close to the sites, the construction of community halls, community offices, creches, open markets and road access. One must also weigh in the benefit of employment opportunities for local people, both in the construction phase and in the considerable long-term maintenance tasks."

Under pressure from Lesotho groups and international environmentalists, and concerned about the reputation it gained for displacement-related suffering in large infrastructure projects, the World Bank has maintained a degree of concern about resettlement and compensation, as has Asmal. But by late 1998 many concerns remained, threatening the disbursement of the Bank's Phase 1B loan. Finally, the corrupt character of Lesotho's bureaucratic-bourgeois class-forming process

was also unveiled in 1999, when to the disgust of local critics and embarrassment (and denial) of the World Bank and South African government, a court case was heard against the Basothu chief executive officer of the LHWP, Masupha Sole. Prosecutors with access to Sole's Swiss bank accounts proved that *over a ten-year period* he successfully induced bribes from some of the largest construction companies in the world, including ABB of Switzerland, Impregilio of Italy, and Dumez of France (which is owned by water-privatizer Lyonnais des Eaux, a regular subject of corruption charges).[35]

The environmentalist critique has been more difficult to resolve. The LHWP exacerbates Lesotho's scarcity of cultivated land (only nine percent can be used for farming), hence pushing peasants onto soil more vulnerable to erosion. The dams also destroy crucial habitats of the Maluti Minnow (an endangered species), bearded vulture and four other species considered "globally threatened."[36] Moreover, LHWP planning followed a purely economic logic: early LHWP feasibility studies failed to include an Environmental Impact Assessment; linings for tunnels were inadequate and had to be cemented; reservoir-induced earthquakes were far worse than anticipated; and soil erosion and sedimentation — which typically lowers dam capacity by one percent per year and silts intake areas — were not initially accounted for. According to Snaddon, Wishart and Davies, "This will be the largest Inter-Basin Transfer in southern Africa, and it will result in considerable alterations of the rivers concerned. These systems will remain unstable for a very long time. The overall environmental effects of the LHWP have not adequately been assessed, and assessments of the instream flow requirements of the rivers involved in the scheme have focussed only on the donor systems."[37] Indeed downstream, the Department of Water Affairs and Forestry admitted that even in 1996 it could not "yet claim that it has

[35] *Business Day*, August 5, 1999; *Washington Post*, September 13, 1999.

[36] See K. Horter, "The Mountain Kingdom's White Oil: The Lesotho Highlands Water Project," *The Ecologist*, 25, 6, 1995 and "Making the Earth Rumble: The Lesotho-South Africa Water Connection," *Multinational Monitor*, May, 1996.

[37] C.D. Snaddon, *et al*., "Some Implications of Inter-Basin Water Transfers for River Functioning and Water Resources Management in South Africa," in Group for Environmental Monitoring, ed., *Record of Proceedings: Lesotho Highlands Water Workshop*, Johannesburg, August 29-30, 1996.

conclusively determined the present and future irrigation water requirements in the study area."[38] Lesotho's own access to water is also now a matter of concern, with all experts and commentators now certain that there is insufficient water in the country to share with South Africa beyond (the still-planned) LHWP Phase 2, and within 10 to 30 years Lesotho would itself likely face a condition of water scarcity.[39]

The consumer critique emanated, particularly in 1998, from Soweto and Alexandra residents who forcefully contradicted President Nelson Mandela's developmental justification (in a 1995 letter to World Bank President James Wolfensohn): "We in South Africa need the water from the LHWP to meet the increase in our demand, and, in particular, to meet the needs of previously neglected communities."[40] Instead, insisted community groups ("civic associations") from the impoverished Johannesburg townships, the LHWP makes water provision to low-income black people more, not less, difficult. In 1995, approximately 1.5 million residents of Gauteng Province did not have direct access to water, and to supply them with 50 liters per person per day would have required only 22 million cubic meters of additional supply annually, representing a small fraction of the water that middle- and upper-income consumers used to water gardens and fill swimming pools.[41] The key issue was that a vast proportion of incoming water (probably more than half in most townships) leaked out of apartheid-era infrastructure, which black households were expected to pay for. The possibilities for conservation were estimated by some credible officials at 40 percent. But the LHWP water distribution structure meant that the main catchment-area intermediary, which should have been in a position to fix leaks and promote conservation through "demand side management," had the reverse incentive, namely to charge municipalities for high-level consumption in order to make payments

[38]Department of Water Affairs and Forestry, *The Orange River Project Replanning Study*, Pretoria, 1996, p. 4.

[39]G. Addison, "Dam It, Let's Pour Concrete," *Saturday Star*, November 3, 1998.

[40]K. Asmal, "Speech to GEM Workshop on Lesotho Highlands Water Project," in Group for Environmental Monitoring, ed., 1996, *op. cit.*, p. 2.

[41]R. Archer, *Trust in Construction? The Lesotho Highlands Water Project* (London: Christian Aid and Maseru, Christian Council of Lesotho, 1996), pp. 58-59.

on LHWP interest charges. Hence given limited municipal resources, the expectation was that the leaks would not be fixed.

As a result, for consumers to pay for the LHWP would mean raising the real marginal price of water dramatically (the World Bank suggests by a factor of five once Phase 1B is complete, to accurately reflect cost increases). Moreover, while bulk water charges to municipalities rose by 35 percent between 1995 and 1998 in large part due to the LHWP, the levy for the first (lowest) block of the Johannesburg block tariff increased by 55 percent,[42] indicating that relatively speaking, first-block consumers paid a higher proportion of the increase than did consumers who used more water. Could tariffs be adjusted to make high-use consumers pay a higher share? In principle yes, but recall that opposition to block tariffs stemmed partly from the (World Bank) logic that privatization "would be harder to establish" if fully profitable cost-price relations were not permitted. With municipal bankruptcies at record levels during the late 1990s (fully half of South Africa's 878 towns were anticipated to require merger into larger districts, including several of Gauteng's smaller cities), such privatization pressure was becoming overwhelming.

So, too, was pressure intensifying to cut off non-paying consumers, both from central government and the World Bank. In October, 1995, World Bank water expert Roome suggested that a "credible threat" was needed to discipline residents who continued the municipal payments boycotts begun during the 1980s, and indeed within 18 months it materialized.[43] From January to December, 1997 there was more than a ten-fold increase in water cut-offs in Gauteng, and a decline from 50 percent to 20 percent in the proportion of those who were cut off that then reconnected. The rate of water cuts intensified further in 1998, with entire townships disconnected in some cases, including individual households who had paid their bills. The LHWP-related water price increases were to some extent responsible, although a challenge by three Alexandra residents to further World Bank loans for Phase 1B until better conservation and distributional-equity

[42]World Bank Inspection Panel, "Lesotho/South Africa: Phase 1B of Lesotho Highlands Water Project: Panel Report and Recommendation," Washington, DC, August 19, 1998, p. 81.

[43]Roome, "Water Pricing and Management," 1995, *op. cit.*, p. 51.

measures were applied — heard by the World Bank Inspection Panel in mid-1998 — was rejected on grounds of a "very tenuous" link.[44]

The three critiques have not been ignored, and indeed the World Bank and Asmal defended the LHWP in part using an ecological modernization discourse backed by extensive studies and the threat of drought. Roome, for example, took pains to rebut the "possible controversial aspects" associated with the social, ecological and consumer critiques, particularly given that "some International NGOs (e.g., Environmental Defense Fund, International Rivers Network) may not support the Bank's decision to proceed with the funding of Phase 1B at this time — partly related to the issues set out below (basically judgment calls on whether progress in Phase 1A has been satisfactory and whether the economics of delays to Phase 1B are acceptable), but partly on principle as part of the larger 'big dams' debate."[45] The LHWP, Roome continued, "provides an opportunity to advance the debate that not all big dams are necessarily bad....The argument against large dams contends that they: are not economically viable; are not socially acceptable; are environmentally disastrous; can be a major cause of impoverishment, and can result in unacceptably high international debt." Roome insisted that "the economics show that this is lowest cost supply, has a good Economic Rate of Return and demand management is being put in place; socially the numbers involved are low, there has been 'good planning' but implementation key; environmentally the impact is limited and has been well managed; poverty-wise the project supports poverty reduction activities and does not squeeze out other activities; and fiscally SA bears the debt, not Lesotho and users pay — not tax payers."[46]

The LHWP principle of "users-pay" (i.e., full cost-recovery) is the giveaway indication that, as in infrastructure provision more generally, orthodox economic logic is overriding considerations of sustainable ecology (at the dam site, downstream in the Orange River, and in terms of waste by

[44] World Bank Inspection Panel, "Panel Report and Recommendation," 1998, *op. cit.*, p. 80.

[45] World Bank, "Lesotho: Lesotho Highlands Water Project — Phase 1B: Project Appraisal Document," (17727-LSO), R98-106(PAD), Water and Urban 1, Africa Region, Washington, DC, April 30, 1998, p. 18.

[46] *Ibid.*, p. 1.

affluent Gauteng consumers, industry and farmers) and environmental justice (with respect to low-income Gauteng residents' access to water and sanitation). Ironically, the World Bank's 1994 *World Development Report* on infrastructure had set out an ecological modernization argument that linked these discourses: "[The] block tariff links price to volume, and it is more efficient at reaching the poor than a general subsidy because it limits subsidized consumption. Increasing-block tariffs also encourage water conservation and efficient use by increasing charges at higher use."[47] This argument was rejected, ultimately, it appears, because Bank staff (Roome and the UIIF authors) convinced even a minister wedded to eco-social justice rhetoric (Asmal) that the merits of attracting private investors into the water sector were so great, and the fiscally-shrinking state was so incapable of its own infrastructural investment, as to warrant the full-fledged commodification and pricing of water in a manner conducive to capital accumulation.

CONCLUSION: TOWARDS A PROGRESSIVE STRATEGY

Thus the three arguments relating to political-economic-ecology have found sites of fruitful conflict, have occasionally intertwined, and have begun to settle into predictable discursive patterns. This is dangerous, however, mirroring the all-too-predictable back-and-forth political swings around variants of mild-mannered Keynesian stimulations in macroeconomic policy (in a South African context which includes the highest real interest rates in the country's history, excessive financial liberalization and capital flight, deindustrialization and dramatic unemployment). Throughout South Africa's recent history, epic battles were waged between contending forces, in which two substantial armies — the "Democratic Movement" (a combination of proxy for the ANC and independent left civil society groups) on the one hand, and the apartheid state (and its business and conservative civil society supporters), on the other — ultimately gridlocked the political terrain, such that the outcome cannot be described as particularly pleasing to anyone.

In the environmental arena, it may well be that the only strategic way forward for progressive forces, given the growing hegemony of orthodox

[47] World Bank, *World Development Report, 1994*, *op. cit.*, p. 81.

economic prescription and the lack of potential to change the state's orientation away from lubricating capital accumulation at any cost, is to build tougher, more durable alliances between community, labor and environmental activists. These will occur, increasingly, on terrain of existing conflicts, such as the urban conflagrations over access to municipal services. There, not only is a potentially new generation of militant community organizations reconstituting itself (in 1997, a Gauteng province "Association of Residents and Civic Organizations" was established from the Alexandra, Soweto, Tembisa and other core civics), but so, too, are municipal workers increasingly aware of the danger that alongside ecologically-destructive infrastructure investments, will come "public-private partnerships" (a euphemism for privatization) which threaten their jobs.

As for ecological activism, however, there remains a great deal of conscientization required before the (traditionally white, middle-class) leadership of activist groups take the "brown agenda" (urban low-income people's immediate ecological needs) on board and thereby confront the limits of ecological modernization discourses, and indeed the structural conditions that lie behind South Africa's environmental crises. Even the Environmental Justice Networking Forum — an impressive, extremely active network with substantial township and rural organizational membership — has tended to neglect structural forms of urban environmental degradation, preferring to label as environmentally racist merely the most obvious practices of differential pollution. Causes rooted in capitalist economics, and the impacts of broader, interrelated policies (such as the infrastructure investment issues discussed above), are difficult to raise, much less address, within the constraints of coalition politics.

Thus the need for semi-peripheral South African capitalism to retain — as just one of its post-apartheid privileges — a particularly cheap labor force, has generally gone unquestioned. The cheapness of that labor force will, as ever, be largely a function of reducing the costs of reproducing labor power (thanks to the lower post-apartheid levels of recurrent municipal service payments, for those low-income workers without sewage and electricity connections). Prospects for challenging the low service levels — and their attendant environmental problems — are dim, given the ANC government's adoption of a World Bank-designed infrastructure investment policy framework; its promotion of export-led, electricity-guzzling zinc instead of

retail energy; and its supply of Lesotho water to Johannesburg-area firms and mining houses at a disproportionate cost to the urban poor. And yet, notwithstanding how stark these contradictions are, and how many riots urban residents have already engaged in around infrastructure, and how well the municipal workers union has joined the struggle to treat infrastructure and services as public not private goods, the strategy has not yet begun to pay off. Routes out of urban environmental injustice are arduous, just as attempts to invoke ecological modernization themes — the internalization of externalities in infrastructure policy-making; cost-benefit analysis in the siting of industrial developments like the Coega zinc smelter; or demand-side management instead of an increased supply of Lesotho water — have not yet proven sufficiently convincing to overcome the orthodox economic insistence on GDP growth.

Yet the challenge for serious environmentalists, David Harvey insists, remains to continue seeking opportunities for alliances — of "militant particularist" groups (to borrow Raymond Williams' expression), whether Lesotho communities, South African municipal workers, Alexandra township residents or traditional green activists — around these ecological issues, so as to one day address

> the material and institutional issues of how to organize production and distribution in general, how to confront the realities of global power politics and how to displace the hegemonic powers of capitalism not simply with dispersed, autonomous, localized, and essentially communitarian solutions (apologists for which can be found on both right and left ends of the political spectrum), but with a rather more complex politics that recognizes how environmental and social justice must be sought by a rational ordering of activities at different scales. The reinsertion of "rational ordering" indicates that such a movement will have no option, as it broadens out from its militant particularist base, but to reclaim for itself a noncoopted and nonperverted version of the theses of ecological modernization. On the one hand that means subsuming the highly geographically differentiated desire for cultural autonomy and dispersion, for the proliferation of tradition and difference within a more global politics, but on the other hand making the quest for environmental and social justice central rather than peripheral concerns. For that to happen, the environmental justice

> movement has to radicalize the ecological modernization discourse.[48]

If the cases above provide any lessons along these lines, such radicalization is possible, though still extremely difficult.

[48] D. Harvey, 1996, *op. cit.*, pp. 400-401.